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PUBLIC UTILITIES
COMMISSION

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE
STATE OF HAWAII

In the Matter of

PUBLIC UTILITIES COMMISSION

Instituting a Proceeding to Investigate
Proposed Amendments to the Framework for
Integrated Resource Planning.

DOCKET NO. 2009-0108

**BLUE PLANET FOUNDATION'S FINAL STATEMENT OF POSITION
AND FINAL PROPOSED FRAMEWORK**

AND

CERTIFICATE OF SERVICE

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Blue Planet Foundation ("Blue Planet"), by and through its attorneys Schlack Ito Lockwood Piper & Elkind, hereby submits its Final Statement of Position and Final Proposed Framework in this proceeding as follows.

I. PROCEDURAL BACKGROUND

On May 22, 1992, the Commission established a Framework for Integrated Resource Planning ("IRP Framework").¹ On October 20, 2008, the State of Hawaii, HECO Companies,² and Consumer Advocate³ entered into the Energy Agreement.⁴ Pursuant to section 32 of the Energy Agreement, "Clean Energy Scenario Planning (CESP)," the parties to the Energy Agreement agreed to seek to replace the current Integrated Resource Planning ("IRP") process with a new Clean Energy Scenario Planning Process. *See* Energy Agreement at 36-37. Section 33, "Clean Energy Scenario Plan," describes sixteen components of a "Clean Energy Scenario Plan." *Id.* at 37-41. On April 28, 2009, the HECO Companies, Kauai Island Utility

¹ Decision and Order No. 11523 filed March 12, 1992 (Docket No. 6617), as amended by Decision and Order 11630 filed May 22, 1992 (Docket No. 6617).

² Hawaiian Electric Company, Inc.; Maui Electric Company, Limited; and Hawaii Electric Light Company, Inc.

³ State of Hawaii Department of Commerce and Consumer Affairs Division of Consumer Advocacy.

Cooperative (“KIUC”), and the Consumer Advocate submitted to the Commission their “Proposed Clean Energy Scenario Planning Framework” (“CESP Framework”).⁵

On May 14, 2009, the Commission issued its Order Initiating Investigation commencing this proceeding to examine proposed amendments to the IRP Framework. On September 23, 2009, the Commission issued its Order Approving the Stipulated Procedural Order, as Modified (“Order”). The Order states that the “starting point” for the issues discussed in this proceeding should be the IRP Framework, rather than the CESP Framework. The Order also sets forth a “Statement of the Issues” consisting of four issues and includes a procedural schedule requiring submission of a “Final Statement of Position and Final Proposed Framework.” *Id.* at 8.

On November 3, 2009, the Commission presented to the parties the paper by the National Regulatory Research Institute (“NRRI”) titled, “Clean Energy Scenario Planning: Thoughts on Creating a Framework” (“NRRI Paper”). Appendix C to the NRRI Paper, “Questions to Ask About the Proposed Frameworks,” lists thirteen questions which the parties are to address in their Final Statements of Position. *Id.*

Pursuant to the Order and the Commission’s November 3, 2009 letter, Blue Planet hereby submits its Final Statement of Position and Final Proposed Framework. Blue Planet’s Final Statement of Position consists of and is reflected in (i) the statement of general considerations, below, (ii) the Joint Proposed Framework, attached as Exhibit A,⁶ and (iii) the responses to the four issues set forth in the Order’s Statement of Issues and thirteen questions

⁴ *Energy Agreement Among the State of Hawaii, Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs, and the Hawaiian Electric Companies* dated Oct. 20, 2008 (“Energy Agreement”).

⁵ The Proposed CESP Framework is attached as Exhibit 1 to the Commission’s May 14, 2009 Order.

⁶ It is noted that the “Joint Proposed Framework” attached as Exhibit A is believed to be identical to the “FSOP Joint Framework” attached as “Exhibit Counties-1” to the “Final Statement of Position of the Counties of Hawai’i, Kaua’i and Maui” dated Dec. 16, 2009.

from Appendix C to the NRRI Paper, also below. Blue Planet's Final Proposed Framework, for purposes of this submission, is the Joint Proposed Framework attached as Exhibit A.

II. GENERAL CONSIDERATIONS

Blue Planet's Final Statement of Position and Joint Proposed Framework are informed by key considerations it believes should properly inform the framework adopted pursuant to this proceeding and the plans and planning processes required by the framework. These general considerations concern heeding significant changes to Hawaii's energy policy landscape, avoiding the pitfalls and failures of the IRP Framework, directly and effectively contributing to the achievement of clean energy objectives, focusing on implementation of these objectives, drawing from the relevant experience of Independent System Operators and employing an Independent Observer to oversee implementation of the planning process, and crafting a framework that is broad enough to accommodate diverse energy issues.

A. The Framework Should Reflect Changes in Hawaii Energy Policy Since the IRP Framework Was Developed in the Early 1990s.

Energy issues in Hawaii have evolved dramatically since the IRP Framework was developed in the early 1990s. At that time, the HECO Companies were largely responsible for the development of new electricity generation sources and for the implementation of demand-side management ("DSM") programs. Both of these functions have changed in the years following development of the IRP Framework. For example, most new generation resources have been developed by independent power producers. Responsibility for DSM has been transferred to an independent third party, the Public Benefits Fee administrator.

To be successful, any framework adopted in this proceeding must reflect these major changes and accord with what may be described as new phase in Hawaii energy policy. As suggested above, this new phase is characterized by increasing amounts of energy from renewable sources developed by independent power producers and less utility involvement in

DSM programs. In addition, this new phase is marked by several important new laws and policies intended to promote the rapid adoption of renewable energy and increased energy efficiency. These new laws and policies are exemplified by the Hawaii RPS law,⁷ as amended by Act 155,⁸ and the Hawaii Clean Energy Initiative (“HCEI”).

This new phase is further marked by a stated commitment to promoting Hawaii as a leader in the adoption of clean energy. For example, Act 155 establishes the goal of Hawaii serving as a “national model,”⁹ and the Energy Agreement similarly provides that “[s]uccessfully developing Hawaii’s energy economy will make the State a global model for achieving a sustainable, clean, flexible, and economically vibrant and independent energy future.” *Id.* at 1. As Governor Lingle declared regarding the HCEI, “[o]ur islands’ abundant natural sources of energy, combined with the considerable capabilities of the Department of Energy, will help Hawai‘i lead America in utilizing clean, renewable energy technologies.”¹⁰

Finally, public awareness and support for ending Hawaii’s dependence on imported fossil fuels, which is crucial to achieving Hawaii’s ambitious energy policy objectives, appear to be steadily increasing. Blue Planet is a Hawaii public interest organization, with over 10,000 registered “Friends of Blue Planet,” dedicated to ending Hawaii’s dependence on imported fossil fuels by promoting the rapid adoption of renewable energy and increased energy efficiency. Blue Planet’s vision is one of diverse interests uniting around a common goal: Hawaii’s swift transition to a clean energy economy. The framework adopted in this proceeding must, to the extent possible, encourage and support increased public involvement in and support for Hawaii’s transition to a clean energy economy.

⁷ Haw. Rev. Stat. ch. 269, Part V *et seq.*

⁸ 2009 Haw. Sess. Laws, Act 155; H.B. 1464, 25th Leg. (Haw. 2009) (“Act 155”).

⁹ 2009 Haw. Sess. Laws, Act 155 § 1.

¹⁰ State of Hawaii Office of the Governor, *Hawai‘i and U.S. Department of Energy Partner to Make Hawai‘i a “World Model” For Clean Energy Economy* (Jan. 28, 2008), available at <http://hawaii.gov/gov/news/releases/2008/hawaii-and-u.s.-department-of-energy-partner-to>.

B. The Framework Should Avoid the Pitfalls and Failures of the IRP Framework.

The past failures of integrated resource planning and the IRP Framework have contributed to the State's inability to achieve important energy policy objectives, including the rapid adoption of renewable energy. Stakeholders interviewed for the Hawaii Energy Policy Report titled, "Hawaii Energy Utility Regulation and Taxation: Practice, Policy and Incentives for Energy Efficiency, Renewable and Distributed Energy Resources" ("HEPP Report"),¹¹ expressed "widespread disappointment with the amount of renewable energy resource implementation in Hawaii." *Id.* at 10. As the HEPP Report explains:

The existing Framework provides criteria and a process that could provide a level playing field for the consideration of energy efficiency, renewable and distributed energy resources. The implementation of the IRP process, however, has not successfully provided the intended fair consideration of all available resources. The PUC has not followed through with implementing the intent of the Framework and has not assertively directed the utilities to meet several crucial requirements specified in the Framework.

Id. at 83 (emphasis added). The Framework adopted in this proceeding should avoid problems associated with the IRP Framework and should promote the rapid adoption of renewable energy and increased energy efficiency.

This proceeding should likewise ultimately result in a Framework that is equal to the task of advancing Hawaii's ambitious energy policy objectives. Rather than being viewed as an informational document, the framework and resulting plans must be enforceable and action-forcing to the extent necessary to achieve the State's energy policy objectives.

¹¹ C. Freedman and J. Lazar, "Hawaii Energy Utility Regulation and Taxation: Practice, Policy and Incentives for Energy Efficiency, Renewable and Distributed Energy Resources: A Report for the Hawaii Energy Policy Project" (July 11, 2003) ("HEPP Report").

Although the IRP Framework successfully provided for implementation of DSM programs and greater public access to resource planning information,¹² the IRP process in Hawaii is generally regarded as having failed to live up to its potential in part because the IRPs were not rigorously reviewed and enforced by the Commission.¹³ As explained in the HEPP Report.

Because the IRP process, including the public advisory group process, is controlled entirely by the utilities, it is only in the process of review by the PUC that other parties have an opportunity to express any exceptions they may have with the utility plans. Without active and diligent oversight by the PUC the IRP process has become largely a utility exercise.

HEPP Report at 87 (emphasis added).

Finally, the failures of IRP have resulted in wasted time and expense by the utilities and participating individuals and agencies. HEPP Report at 5, *id.* at 6 (suggesting that if the PUC does not intend to enforce the IRP Framework, IRP should be reduced or abandoned “and the extensive resources now expended on this process should be conserved.”); *id.* at 86 (“IRP is expensive and time consuming[.]”). The framework adopted in this proceeding should be designed to meaningfully and effectively contribute toward meeting Hawaii’s energy policy

¹² *Id.* at 86.

¹³ The HEPP Report further notes that:

The IRP process is certainly the PUC’s most explicit expression of energy policy and could, if rigorously implemented, provide a productive venue for implementing Hawaii’s energy policies. Unfortunately, the IRP process has not been implemented as diligently as originally intended by the PUC. Several IRP applications filed long ago by the utilities have not even been scheduled for review by the PUC.

Id. at 4 (emphasis added). Similarly,

Several important aspects of the implementation of the IRP process are ineffective because the PUC has not followed through with diligent application of the terms or intent of the IRP Framework. Recent IRP plan applications have not been reviewed by the PUC at all.

Id. at 87 (emphasis added).

objectives and should avoid any wasted time and expense by the utilities and participating individuals and agencies.

C. The Framework Should Support Hawaii's Swift Transition to a Clean Energy Economy by Directly and Effectively Contributing Toward the Achievement of Fundamental State Energy Objectives.

The Commission's order initiating this proceeding cites to section 269-6(b), Hawaii Revised Statutes, which authorizes the Commission "to consider the need for increased renewable energy use in exercising its authorities and duties," *id.*, as one of the bases for this proceeding to consider revisions to the IRP Framework. To be successful, it follows that any integrated resource planning framework adopted in this proceeding must directly and effectively contribute toward achievement of fundamental Hawaii energy objectives.

As noted above, currently a primary state energy objective is the achievement of seventy percent clean energy by 2030.¹⁴ Act 155 requires that Hawaii achieve "a seventy percent clean energy economy within a generation."¹⁵ To accomplish this, forty percent of net electricity sales by electric utility companies in Hawaii shall be from renewable electrical energy, and energy efficiency measures shall cause the equivalent of a thirty percent reduction in energy use.¹⁶ Accordingly, under Part V of Chapter 269, Hawaii Revised Statutes, the utilities are required to acquire specific percentages of electrical energy from renewable energy and energy efficiency, or Renewable Portfolio Standards ("RPS"). Section 269-92(b), as amended by Act 155, requires each utility to establish an RPS of forty percent of its net electricity sales by 2030.¹⁷ Section 11 of Act 155 requires the establishment of Energy Efficiency Portfolio Standards ("EEPS") capable of securing 4,300 gigawatt hours of electricity use reductions

¹⁴ 2009 Haw. Sess. Laws, Act 155 §§ 3, 11.

¹⁵ 2009 Haw. Sess. Laws, Act 155 § 1.

¹⁶ *Id.* at §§ 3, 11; *see also* Hawaii Powered: Hawaii Clean Energy Initiative (Energy efficiency measures implemented over the next two decades can save 4,300 gigawatt hours of electricity, equivalent to approximately thirty percent of the demand forecasted for 2030), *available at* http://www.hawaiicleanenergyinitiative.org/wg_efficiency.html.

statewide by 2030. It should be noted that Hawaii law also requires statewide reduction of greenhouse gas emissions to 1990 levels by the year 2020,¹⁸ and the Hawaii Legislature has concluded that accelerating the use and development of energy efficiency and renewable energy technologies can contribute to greenhouse gas reduction.¹⁹

The HCEI and Energy Agreement are potentially important sources of energy policy objectives. Consistent with Act 155, the Energy Agreement parties commit to the goal of “70 percent clean, renewable energy for electricity and transportation by 2030[.]” Energy Agreement at 18.²⁰ The State and HECO further declare:

The future of Hawaii requires that we move more decisively and irreversibly away from imported fossil fuel for electricity and transportation and towards indigenously produced renewable energy and an ethic of energy efficiency. The very future of our land, our economy and our quality of life is at risk if we do not make this move and we do so for the future of Hawaii and of the generations to come.

Energy Agreement at 1 (emphasis added).

D. The Framework Should Focus on Implementation of Clean Energy Objectives.

The proper focus of any framework adopted in this proceeding should be the direct implementation of Hawaii’s clean energy law and policy objectives. At present, Hawaii’s energy law and policy objectives are embodied in the Hawaii RPS law, as amended by Act 155, and the Energy Agreement serves a source of potential energy objectives.²¹ These sources

¹⁷ 2009 Haw. Sess. Laws, Act 155 § 2.

¹⁸ Haw. Rev. Stat. § 342B-71.

¹⁹ 2009 Haw. Sess. Laws, Act 155 § 1.

²⁰ See also “Hawaii Powered: Hawaii Clean Energy Initiative” (HCEI goal is “to meet 70% of Hawai’i’s Energy needs with clean energy by 2030”), *available at* <http://www.hawaiiicleanenergyinitiative.org/>.

²¹ Although the Hawaii RPS law as amended by Act 155 may be superseded by subsequent legislation, that law may properly serve as a basis for adoption of a framework in this proceeding. The framework can be established in a manner that accommodates future supplemental and non-conflicting statutory requirements. In the event conflicting statutory requirements are adopted in the future, the framework may be modified accordingly.

provide a relatively clear and straightforward expression of Hawaii's current energy objectives: seventy percent clean energy by 2030.

By contrast, the IRP Framework was developed at a time when Hawaii's energy policy objectives may have been less fully developed or embodied in statutory requirements. In addition, knowledge and awareness of the economic and energy security impacts of Hawaii's dependence on imported fossil fuels may have been less widespread, particularly among the public. Although the general direction of increased energy efficiency and renewable energy had been established, the focus was on resource planning more than implementation. In particular, the IRP process was initially intended to adopt DSM and plan for additional generation to supply a growing demand for electricity (although more recent efforts, such as HECO's IRP 4,²² consider large-scale and distributed renewable energy generation, greenhouse gas emissions reduction due to climate change law and policy, and biofuel conversion of existing base load utility generation).

IRP has traditionally been employed to assist utilities with planning new resources to serve load growth; the revised framework and processes must necessarily focus on accelerating the retirement of fossil-fuel generation. Given the relatively clear direction and objectives at present, Blue Planet believes implementation of established clean energy objectives, more than resource planning, is the proper focus of the framework and processes undertaken pursuant to the framework.

E. The Framework Should Utilize an Independent Observer and Draw from the Experience of Independent System Operators.

1. Independent Observer.

Blue Planet supports utilization of an Independent Observer ("IO") as an aid to ensure the Framework and processes are open, transparent, and fair for all stakeholders and

affected parties. Vertically integrated utilities are often required to maintain separate generation and transmission activities, and to comply with stringent standards of conduct that require the utilities' grid-related activities to be performed in a non-discriminatory, open and transparent manner. In the absence of similar institutional arrangements and requirements for the HECO Companies, an IO can ensure that stakeholders are fully able to participate in and contribute toward the development of planning assumptions and scenarios, require the HECO Companies and other parties to fully evaluate credible alternative planning scenarios and assumptions, and properly and safely promote transparency with regard to planning assumptions and model outputs, including any that may be subject to protective orders. In addition, with transfer of the utilities' energy efficiency services to an independent third-party administrator, an IO may ensure energy efficiency programs are properly considered in the planning process. It is suggested that the IO should be selected by the Commission in the same manner as this third-party administrator, and that the IO report to the Commission.

In Hawaii, at this time there is no ISO or similar independent entity to conduct the clean energy planning process. In addition, the HECO Companies are not required by a code of conduct, or similar FERC requirements that apply to other utilities in the United States, to ensure the grid planning function is independent or functionally separate from the utilities' generation function. Nonetheless, Hawaii's clean energy planning process may accurately be characterized as less of a utility plan and more of a State-wide implementation plan requiring the active involvement of the Public Benefits Fee Administrator ("PBFA"), independent power producers, electric vehicle developers, the Advisory Committee, stakeholders and the public. The HECO Companies' relatively limited role is anticipated to continue to shift toward supply integrator and grid developer and operator.

²² Docket No. 2007-0084.

2. ISO Planning Process.

For similar reasons, as a public interest organization Blue Planet favors a Framework and processes which are based upon successful elements of the planning process utilized by an ISO working in conjunction with various stakeholders in other parts of the United States. As the name indicates, ISOs typically plan and operate generation and transmission assets of independent power producers, electric utilities and power marketers; they hold no assets and are not-for-profit entities. Due to the increase in electricity generation obtained by the HECO Companies from independent power producers, both fossil and renewable, and their decreasing involvement in energy efficiency programs, it appears they are evolving to function as ISOs, especially insofar as they operate as electricity supply integrators and electric grid operators. To the extent this trend continues, the Framework should be established in a manner that seeks to incorporate the beneficial aspects of ISOs and draw from their extensive experience in grid planning and operation.

Accordingly, and as explained in its Preliminary Statement of Position filed November 2, 2009 (“PSOP”), Blue Planet favors a framework and planning process which incorporate and are based upon successful elements of the planning process utilized by ISOs working in conjunction with various stakeholders in other parts of the United States. These elements include independence, openness and transparency.²³

Independence. As the name indicates, ISOs typically plan and operate generation and transmission assets of independent power producers, electric utilities and power marketers. ISOs are organized as not-for-profit entities and are not legally or financially associated with utility or energy market participants. An ISO is unable to benefit financially from planning process outcomes and accordingly is focused on developing cost-effective and reliable grid plans

to support achievement of energy policy requirements. The essential point is that the grid planning process is conducted by the ISO and not the utility.

Openness. The planning process (including all meetings) is open to all stakeholders. From the outset, all parties are given the opportunity to review all planning-related data and analyses. Websites are used extensively to ensure access to planning assumptions, models and study results. Comparable treatment, with development of a plan that treats similarly-situated stakeholders comparably in system planning, is sought after consideration of data and comments from all stakeholders.

Transparency. The basic criteria, assumptions and data underlying system planning are disclosed to all stakeholders. Written documentation is available to describe basic planning methodology, criteria, assumptions and processes. Sufficient information is made available to enable others to replicate the results of planning studies. Two-way exchange of information is facilitated and changes to plans, and the reasons for changes, are clearly communicated.

An example of an independent, open, transparent and stakeholder-driven process may be found in the process employed by the North American Electric Reliability Corporation (“NERC”) regarding bulk power reliability standards. The NERC reliability standard setting process is open, transparent and utilizes significant stakeholder involvement to develop and modify electric reliability standards.²⁴ The process is subject to Federal Energy Regulatory Commission (“FERC”) oversight, and standards developed pursuant to the process are subject to FERC approval.

²³ See Federal Energy Regulatory Comm’n., Order No. 890 at 247-88 (FERC Docket Nos. RM05-25-000 and RM05-17-000) (Feb. 16, 2007).

²⁴ See NERC, “Reliability Standards Development Procedure Version 6.1 (June 7, 2007), available at <http://www.nerc.com/page.php?cid=2|247>.

Other examples of independent, open, transparent and stakeholder-driven energy planning processes include the process employed in Texas by the Electric Reliability Council of Texas (ERCOT) to develop Competitive Renewable Energy Zones (CREZ),²⁵ the process employed in California by the Renewable Energy Transmission Initiative (RETI) to identify renewable energy zones,²⁶ and the process employed by the Michigan Public Service Commission's Wind Energy Resource Zone Board to develop wind zones.²⁷ The common themes in these state energy planning processes, as well as ISO and NERC processes, is that an entity other than the local utility manages the planning process, conducts planning studies, and maintains an open and transparent process with substantial stakeholder participation.

F. The Framework Should Accommodate Diverse Issues.

Hawaii's energy objectives are far-reaching and transformational. The framework and processes must be correspondingly flexible, robust and responsive. For example, the framework and processes should be able to address the interaction between Hawaii's electric system and transportation (including plug-in vehicles and mass transit) and electric pumping of water and wastewater. Planning must be coordinated with planning for Hawaii's transition to electric vehicles. Concluding that it is "essential for the State to aggressively promote and develop alternatives to fossil fuel modes of transportation," the Hawaii Legislature in 2009 passed Act 156 ("Act 156") to provide sufficient tools to develop an infrastructure for electric vehicles in Hawaii.²⁸ Act 156 also establishes a Transportation Energy Transformation Grant Fund Program to provide grants for the acquisition of electric vehicles, installation of electric vehicle charging infrastructure, and innovative programs that "diversify transportation energy

²⁵ See, e.g., ERCOT, "Analysis of Transmission Alternatives for Competitive Renewable Energy Zones in Texas," available at http://www.ercot.com/news/presentations/2006/ATTCH_A_CREZ_Analysis_Report.pdf.

²⁶ See, e.g., "Western Renewable Energy Zones – Phase 1 Report" dated June 2009, available at <http://www.energy.ca.gov/2009publications/DOE-1000-2009-011/DOE-1000-2009-011.PDF>

²⁷ See, e.g., Public Sector Consultants, Inc., "Final Report of the Michigan Wind Energy Resource Zone Board" dated Oct. 15, 2009, available at http://www.dleg.state.mi.us/mpsc/renewables/windboard/werzb_final_report.pdf.

sources.”²⁹ Similarly, planning should be broad and flexible enough to incorporate considerations related to electricity consumption required for municipal pumping of water and wastewater and the potential benefits of coordinated operations.

Electric transmission and distribution systems are expected to require significant review, modification and improvement to achieve Hawaii’s energy objectives. The framework and processes must facilitate achievement of necessary improvement of these systems. Issues related to this effort include distributed generation and storage, plug-in electric vehicles, power quality requirements, the development of a smart grid, bulk power storage, and innovative rate design to discourage peak use and provide customer demand response for ancillary services.

Other policy issues properly addressed by the framework and processes include:

(1) the relationship between distributed generation and large-scale central station generation, and whether avoided transmission and distribution costs from reduced capital expenditures and system energy losses are offset by the loss of economies of scale; (2) the potential role of imported biofuels and energy security concerns; (3) the determination of capacity values for renewable energy sources and the use of capacity values for supply adequacy planning purposes; (4) whether bulk power and distribution system reliability standards should be modified to facilitate increased intermittent renewable energy sources; and (5) resource loading order protocols.

Finally, the framework and processes must be capable of addressing any technical barriers to achieving Hawaii’s energy objectives presented by the design and operation of the electric grid. The HECO Companies consistently maintain the grids create technical limits to the amount of renewable energy that can be adopted. The framework must provide for a process that directly plans to overcome any such technical limitations. These issues include: (1) design

²⁸ 2009 Haw. Sess. Laws, Act 156 § 1, S.B. 1202, 25th Leg. (Haw. 2009).

and/or operational modifications at the distribution level that would enable distribution circuit penetration of renewable distributed generation exceeding the current limit of fifteen percent of the circuit peak system demand; (2) the required levels and options to provide ancillary services and bulk power storage to ensure system stability; (3) the role of smart grid and advanced metering infrastructure, including the expected timing of adoption of such measures; and (4) contingency planning regarding proposals for up to 400 MW of wind energy from Lanai and/or Molokai.

G. The Framework Should Incorporate “Clean Energy Planning” and “Clean Energy Plans” As Key Terminology.

Consistent with the foregoing, Blue Planet supports the use of “Clean Energy Planning” (or, “CE Planning”) as a replacement for “Integrated Resource Planning” and “Clean Energy Scenario Planning,” and “Clean Energy Plan” (or, “CE Plan”) as a replacement for “Action Plan.” Blue Planet also supports referring to the framework as “A Framework for Clean Energy Planning.”

It is suggested that the terminology used in the framework, planning process and plans may play an important role in achieving the energy objectives. Terminology that is accurate, appropriately forward-looking, and simple and easy to understand should be favored. The terms CE Planning and CE Plan appear to be narrow enough to accurately describe the resource planning process, yet are simple and straightforward enough to be easily understood by members of the public and stakeholders. They are also consistent with proposed use of the key term, “Clean Energy Objectives” (or, “CE Objectives”) in the Joint Proposed Framework.

Public support may play a critical role in achieving Hawaii’s ambitious energy objectives. CE Planning and CE Plan convey the fundamental shift that the framework and resulting planning process are intended to promote and achieve: from the “integration” of

²⁹ *Id.* at § 7.

renewable energy to a system in which the use of imported fossil fuel is dominant to a system in which clean energy predominates and imported fossil fuel is phased out. The term Integrated Resource Planning, in addition to being associated with past efforts that were unable to achieve stated energy goals, implies that clean energy remains supplemental to imported fossil fuel, which is inconsistent with stated energy law and policy objectives. Although fossil fuel resources will continue to be utilized in the near term, statutory requirements mandate that it become a relatively small percentage of Hawaii's energy in less than two decades. Similarly, the term Clean Energy Scenario Planning, in addition to introducing jargon (i.e., 'scenario planning'), may be relatively inaccurate if the framework and planning process do not overwhelmingly rely on scenario planning as the dominant planning methodology. It may be advantageous to use the more encompassing "CE Planning," a broader term that retains adaptive flexibility for future modifications of the planning process.

III. ISSUE 1: "What are the objectives of CESP and how do they differ from the objectives of IRP?"

The objectives of CESP and IRP, insofar as the IRP objectives are consistent with the Joint Proposed Framework, do not appear to differ to a large extent. It appears that the chief virtue of scenario planning in general, and clean energy scenario planning in particular, is that it may help identify resource or policy responses that produce favorable results in all or most plausible scenarios. *See* NRRI Paper at 9. Like CESP, however, IRP can be broad and flexible enough to identify, analyze and evaluate a range of potential scenarios. *See generally* § VII, *infra*. Thus, the two approaches do not differ significantly.

IV. ISSUE 2: “What is the basis for each of the proposed changes to the IRP process, and are these changes reasonable and in the public interest?”

The bases for the proposed changes to the IRP process are to a certain extent self-evident based upon the specific proposed revisions to the IRP Framework set forth in the Joint Proposed Framework. These changes are generally believed to be reasonable and in the public interest. For example, the addition of language concerning the PBFA is reasonable and in the public interest given the importance of energy efficiency in achieving Hawaii’s clean energy objectives and the importance of the PBFA’s role in increasing energy efficiency in Hawaii. *See* Joint Proposed Framework at s. II.F. § 3. As another example, the Joint Proposed Framework expands the role of the advisory groups and provides for an independent facilitator to oversee the utility planning process. Both of these changes are reasonable and in the public interest in part based upon the increased priority in Hawaii energy policy on achieving significant clean energy objectives.

V. ISSUE 3: “Whether the proposed changes to the IRP process should include changes to reflect differences between electric cooperatives and investor owned utilities?”

In general, the Joint Proposed Framework is sufficiently broad to accommodate investor-owned utilities and cooperatives, such as KIUC. *See generally* Kauai Island Utility Cooperative’s Response to National Regulatory Research Institute’s Comments on Clean Energy Scenario Planning filed Dec. 2, 2009 at 5-6 (noting the Commission’s determination in Docket No. 05-0075, Decision and Order 22490 filed May 26, 2006, that “IRP Framework appears to be broadly written to already allow for the flexibility KIUC was seeking through its proposed revisions [to the IRP Framework]”). Given the broad agreement on implementation of Hawaii’s clean energy objectives, a framework that includes and accommodates all relevant utilities may best encourage and support achievement of these objectives. Blue Planet remains open, however, to further consideration of a waiver or exemption process for KIUC, or separate section

of the framework for KIUC, if KIUC or other parties further propose and advocate for such provisions. Blue Planet's final position on this issue will be as set forth in its post-hearing briefs.

VI. ISSUE 4: "What should be the role of the state's public benefits fee administrator?"

The role of the PBFA is critical to the success of resource planning and should be as set forth in the Joint Proposed Framework, in particular section II.F.

VII. NRRI PAPER APPENDIX C QUESTIONS

A. "1. Does the proposed framework provide a reasonable process for defining the question(s) that the CESP must answer?"³⁰

Yes. The Joint Proposed Framework provides a reasonable process for defining the questions the planning process must answer. *See, e.g.*, Joint Proposed Framework at § III.B(1)(b)(1) (Commission may specify questions and issues for IRP analysis).

B. "2. Does the proposed framework enable the Commission to meet its statutory requirements regarding the review and establishment of RPS and EEPs targets?"

Yes. The Joint Proposed Framework should enable the Commission to meet its statutory requirements regarding review and establishment of RPS and EEPs requirements. *See, e.g.*, Joint Proposed Framework at §§ III.A-D (planning major steps, planning cycle, and docket).

C. "3. Does the proposed framework provide a reasonable process for defining a starting point for scenario planning?"

Yes. The Joint Proposed Framework provides a reasonable process for defining a starting point for scenario planning. *See, e.g.*, Joint Proposed Framework at § III.B(1)(c)(1) (three-year planning cycle to identify possible future scenarios to be considered in developing plans and action plans).

³⁰ Pursuant to the e-mail from David Boonin (NRRI) to counsel for the Commission dated Dec. 16, 2009, the term "proposed framework" in the NRRI Paper Appendix C questions "refers to whatever framework a party proposes in its final statement of position." *Id.*

D. “4. Does the proposed framework provide a reasonable process for discovering a plausible range of uncertainties and trends?”

Yes. The Joint Proposed Framework provides a reasonable process for discovering a plausible range of uncertainties and trends. *See, e.g.*, Joint Proposed Framework at § III (Planning context includes consideration of uncertainties).

E. “5. Does the proposed framework differentiate between uncertainties and predetermined trends?”

The Joint Proposed Framework appears to differentiate between predetermined trends and uncertainties. The Joint Proposed Framework requires extensive consideration of “uncertainties.” *See* Joint Proposed Framework at § I (“Strategy” defined to include planning that considers uncertainties), *id.* at § II.F(4) (PBFA to provide information to the planning process concerning uncertainties), *id.* at § III.A(1) (planning process to clarify uncertainties), *id.* at § III.D(1)(a)(8) (IRP shall describe uncertainties), *id.* at § III.D(1)(b)(5) (IRP shall describe analyses of uncertainties), and *id.* at § IV.G(2) (utility shall identify resource option uncertainties), *id.* at § IV.J(3) (resource optimization plans shall note uncertainties). Although the Joint Proposed Framework does not use the terms ‘trends’ or ‘predetermined trends,’ assumptions and forecasts are referred to and considered extensively. To the extent these are analogous to trends or “predetermined trends,” they appear to be distinguishable from uncertainties in the planning process contemplated by the Joint Proposed Framework.

F. “6. Does the proposed framework provide a reasonable process for identifying the drivers of uncertainty that make a difference?”

Yes. The Joint Proposed Framework provides a reasonable process for identifying the drivers of uncertainty that make a difference. The Joint Proposed Framework requires extensive consideration of “uncertainties.” *See* § VII.E, *supra*. The comprehensive review of uncertainties appears likely to ensure identification of “drivers” that “make a difference.” *Id.*

G. “7. Does the proposed framework provide a reasonable process for defining a reasonable number of scenarios that define a plausible range of different futures for planning decisions?”

Yes. The Joint Proposed Framework provides a reasonable process for defining a reasonable number of scenarios that define a plausible range of different futures for planning decisions. *See, e.g.*, Joint Proposed Framework at § IV.A (requiring development of sufficient number and range of scenarios).

H. “8. Does the proposed framework enable the Commission to make timely and informed decisions about the budget for the Public Benefits Fee Administrator?”

Yes. The Joint Proposed Framework should enable the Commission to make timely and informed decisions about the budget for the Public Benefits Fee Administrator. *See* Joint Proposed Framework at § II.F (description of PBFA’s responsibility and participation in planning process).

I. “9. Does the proposed framework provide a reasonable process for assessing actions and making decisions?”

Yes. The Joint Proposed Framework provides a reasonable process for assessing actions and making decisions. *See* Joint Proposed Framework at §§ III, IV (planning process and considerations).

J. “10. Does the proposed framework provide a reasonable process for ongoing monitoring and adjustments to approved plans?”

Yes. The Joint Proposed Framework provides a reasonable process for ongoing monitoring and adjustments to approved plans. *See* Joint Proposed Framework at §§ III, IV (planning process and considerations).

K. “11. Does the proposed framework create an efficient, transparent process that involves all relevant decisionmaking entities?”

Yes. The Joint Proposed Framework should create an efficient, transparent process that involves all relevant decision-making entities. *See* Joint Proposed Framework at §§ III, IV (planning process and considerations, including public participation).

L. “12. Does the proposed timeline provide adequate time for the participants to address effectively each step of the framework?”

Yes. The Joint Proposed Framework includes a proposed timeline that should provide adequate time for participants to effectively address each step of the framework. *See* Joint Proposed Framework at §§ III, IV (planning process and considerations).

M. “13. Does the proposed frequency of scenario-planning cycles allow the Commission to meet its related statutory responsibilities efficiently?”

Yes. The Joint Proposed Framework includes a proposed frequency of scenario-planning cycles that should allow the Commission to meet its related statutory responsibilities efficiently. *See* Joint Proposed Framework at §§ III, IV (planning process and considerations).

DATED: Honolulu, Hawaii, December 21, 2009.



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PUBLIC UTILITIES COMMISSION

STATE OF HAWAII

A FRAMEWORK FOR INTEGRATED RESOURCE PLANNING

March __, 2010

I. DEFINITIONS

Unless otherwise clear from the context, as used in this framework:

“Action” (as used in the context of a utility action plan) means any specific activity (resource option, study, program, measure, etc.) that the utility intends to implement in order to provide required services and/or attain planning objectives.

“Action plan” means a program implementation schedule, as part of a utility’s integrated resource plan, representing a strategy, including a timetable of programs, projects, and activities designed to meet energy objectives over the first five to ten year period of the 20-year planning horizon, including the State of Hawai‘i’s clean energy objectives.

“Capital investment costs” means costs associated with capital improvements, including planning, the acquisition and development of land, the design and construction of new facilities, the making of renovations or additions to existing facilities, the construction of built-in equipment, and consultant and staff services in planning, design, and construction. Capital investment costs for a program are the sum of the program’s capital improvement project costs.

“CHP” means the production of useful heat and electricity from the same process or source.

“Clean energy” means electrical energy generated using renewable energy as a source or as electrical energy savings brought about by the use of renewable displacement or off-set technologies or energy efficiency technologies as defined as “renewable electrical energy” in HRS ch. 269, pt. V, § 269-91, as amended.

“Clean Energy Objectives” or “CE Objectives” means moving the State of Hawai‘i off of fossil fuel use and on to Clean Energy use, as mandated by federal, State and county laws (including, but not limited to, HRS ch. 269, pt. V, as amended), and as may be informed by policy statements and guidance.

“Costs” means the full and life cycle costs of a resource option.

“Cost categories” means the major types of costs and includes research and development costs, investment costs, and operating and maintenance costs.

“Cost elements” means the major subdivision of a cost category. For the category “investment costs, it includes capital investment costs, initial equipment and furnishing costs, and initial education and training costs. For the categories “research and development costs” and “operating and maintenance costs,” it includes labor costs, fuel costs, materials and supplies costs, and other current expenses.

“Demand-side management” or “DSM” means programs designed to influence utility customer uses of energy to produce desired changes in electricity demand, including, but not limited to, conservation, energy efficiency, demand response, load management, rate and fee design measures (e.g., declining block rate designs, generation hook-up fees, and standby charges), and renewable substitution.

“Design costs” means the costs related to the preparation of architectural drawings for capital improvements, from schematics to final construction drawings.

“Distributed Generation” or “DG” means electric generating technologies installed at, or in close proximity to, the end-user’s location including, but not limited to, renewable energy and combined heat and power (“CHP”) facilities, and dispatchable emergency generators.

“Effectiveness measure” means the criterion for measuring the degree to which the objective sought is attained.

“External benefits” means external economies; benefits to or positive impacts on the activities of entities outside the utility and its ratepayers. External benefits include environmental, cultural, and general economic benefits.

“External costs” means external diseconomies; costs to or negative impacts on the activities of entities outside the utility and its ratepayers. External costs include environmental, cultural, and general economic costs.

“Feed-in-Tariff” or “FIT” means a set of standardized terms and conditions, including published purchased power rates, which a utility shall pay for each type of renewable energy.

“Full cost” means the total cost of a program, system, or capability, including research and development costs, capital investment costs, and operating and maintenance costs.

“Hawai‘i Revised Statutes” or “HRS” means current State laws governing the State of Hawai‘i.

“Integrated Resource Plan” or “IRP” is a plan governed by this framework which provides mandatory guidelines for the utilities for meeting the utility’s forecasted load over time with supply-side and demand-side resources consistent with clean energy objectives.

“Investment costs” means the one-time costs beyond the development phase to introduce a new system, program, or capability into use. It includes capital investment costs, initial equipment acquisition costs, and initial education and training costs.

“Life cycle costs” means the total cost impact over the life of the program. Life cycle costs include research and development cost, investment cost (the one-time cost of instituting the program), and operating and maintenance (O&M) cost.

“Net Energy Metering” or “NEM” is a service to an electric consumer under which electric energy generated by that electric consumer from an eligible on-site generating facility (“customer-generator”) and delivered to the local distribution facilities that is used to offset electric energy provided by the electric utility to the electric consumer during the applicable billing period.

“Operating and maintenance costs” or “O&M costs” means recurring costs of operating, supporting, and maintaining authorized programs, including costs for labor, fuel, materials and supplies, and other current expenses.

“Participant impact” means the impact on participants in a demand-side management program in terms of the costs borne and the direct, economic benefits received by the participants.

“Planning objectives” are desired outcomes to be attained by actions by the utility and Public Benefits Fee Administrator.

“Program” means projects, resources and/or activities in a strategy, scenario and/or the Action Plan.

“Public Benefit Fee Administrator” or “PBF Administrator” means the third-party administrator of energy efficiency demand-side management programs as defined in HRS ch. 269, pt. VII, § 269-122.

“Ratepayer impact” means the impact on ratepayer in terms of the utility rates that ratepayers must pay.

“Research and development costs” means costs associated with the development of a new system, program, or capability to the point where it is ready for introduction into operational use. It includes the costs of prototypes and the testing of the prototypes. It includes the costs of research, planning, and testing and evaluation.

“Renewable Portfolio Standards” or “RPS” means the State of Hawai‘i’s renewable portfolio standards as defined in HRS ch. 269, pt. V.

“Request for Proposals” or “RFP” means a written request for proposals issued by an electric utility or other entity to solicit bids from interested parties for provision of

supply-side or demand-side resources or services to a utility pursuant to an applicable competitive bidding process.

“Resource option” is a program, generation unit, tariff provision, or any other measure (collectively “measures”) that would contribute to meeting energy needs or attainment of planning objectives. Resource options would include measures that could be implemented by the utility, the public benefit fee administrator or the Commission as well as those measures anticipated to be implemented by other entities (such as State of Hawai‘i programmatic governmental agency efficiency measures).

“Scenario” is a distinctive set of possible, plausible circumstances that would have a major effect on resource planning decisions. Scenarios would be explicitly identified in the planning process in order to (a) provide an appropriate breadth to the scope of plausible analysis assumptions utilizing stakeholder participation, (b) frame meaningful planning objectives and measures of attainment and (c) test the “robustness” of candidate strategies with respect to a range of possible future circumstances. Scenarios could be formulated based on possible circumstances including those that are outside the control of the utilities and Commission and those that based on major “game changing” resource strategies (such as an inter-island cable system).

“Societal cost” means the total direct and indirect costs to society as a whole. Society includes the utility and, in a demand-side management program, the participants.

“Societal cost-benefit assessment” means an assessment of the costs and benefits to society as a whole.

“Strategy” is a set of perspective resources and actions that are designed to meet the planning objectives. A strategy is similar to what the HECO Companies have referred to as “candidate plans” in the IRP applications filed under the existing IRP Framework except that a strategy could also include appropriate contingency planning, parallel planning measures to address future uncertainties. In the planning process each strategy would be assessed with respect to the various identified scenarios. An action plan would be identified to implement a preferred strategy and/or to maintain flexibility to implement more than one possible preferred strategy or one or more contingency strategies.

“Supply-side programs” means programs designed to supply power either to the utility grid or to a particular customer or entity, including, but not limited to, renewable energy, CHP, and independent power producers.

“Total resource cost” means the total cost of a demand-side management program, including both the utility and participants' costs.

“Utility” or “Public Utility” an organization that maintains the infrastructure for a public service (often also providing a service using that infrastructure). In the case of electrical service, the organization can be privately-owned, such as Hawaiian Electric Company, Inc., the Hawaii Electric Light Company, Inc., the Maui Electric Company, Ltd., or

publicly-owned such as a municipal, or member-owned such as a cooperative, as in the case for Kauai Island Utility Cooperative. Other public utilities can provide natural gas (or as in the case of The Gas Company, propane and synthetic gas), water or sewage services.

“Utility cost” means the cost to the utility (including ratepayers), excluding costs incurred by participants in a demand-side management program.

“Utility cost-benefit assessment” means an assessment of the costs and benefits to the utility.

II. INTRODUCTION

A. Goal of Integrated Resource Planning

The goal of integrated resource planning is to employ a comprehensive and flexible planning process to develop and implement integrated resource plans which shall govern utility acquisition and utilization of all capital projects, purchased power, and demand-side management toward achieving and exceeding Clean Energy Objectives (“CE Objectives”) in an efficient, economical, and prudent manner that promotes Hawai‘i as a leader in the adoption and use of clean energy and facilitates Hawai‘i’s swift transition to a clean energy future.

B. Governing Principles (Statements of Policy)

1. The development of integrated resource plans are the responsibility of each utility, in consultation with advisory group(s), non-utility stakeholders, and the public, and with the oversight and approval of the commission.
2. Integrated resource plans shall comport with federal, state, and county environmental, health, and safety laws and formally adopted state and county plans.
3. Integrated resource plans shall be developed upon consideration and analyses of the short- and long-term costs, benefits, and risks associated with all appropriate and feasible supply-side and demand-side distributed generation and energy management resources
4. Integrated resource plans shall consider technological advances in the utility’s transmission and distribution infrastructure plans such as advanced data acquisition and system controls (i.e., smart grid), energy storage, or changes in the utility’s operating procedure.
5. Integrated resource plans shall consider the plans’ impact on utility customers, environmental and cultural resources, the local economy, and the broader society.

6. Integrated resource plans shall take into consideration a utility's financial integrity, size, and physical capability.
7. Integrated resource planning shall be an open public process which shall maximize public involvement to enable mutual collaboration, communication, and feedback between the utility and non-utility stakeholders and the public and create broad-based awareness and support for achieving and exceeding CE Objectives.
8. A utility and intervenors are entitled to recover all appropriate and reasonable integrated resource planning costs as approved by the Commission.
9. Integrated resource plans shall prioritize and encourage the increased use of distributed generation over centralized fossil-based generation.
10. Integrated resource plans shall seek to achieve and exceed CE Objectives, including the economic and environmental benefits associated with achievement of energy independence.
11. Integrated resource plans shall take into consideration the need to prevent or minimize power outages during and after disaster situations.
12. Integrated resource planning shall be based upon and incorporate to the extent reasonable the successful elements of the planning process utilized by utilities and Independent System Operators working in conjunction with various stakeholders in other jurisdictions.
13. Integrated resource plans shall prioritize resource acquisition and integration such that demand-side management programs and renewable energy resources are first optimized before consideration is given to fossil-based resources.
14. No customer or third party shall be required to disclose confidential information during the collection of data for integrated resource planning-related proposals or programs.
15. Integrated resource plans shall address all technical barriers to achieving CE Objectives.

C. Utility's Responsibility

1. Each utility is responsible for developing and maintaining a plan or plans for meeting the energy needs of its customers.
2. The utility shall prepare and submit to the commission for commission review at the time or times specified by the commission the utility's integrated resource plan and action plan.

3. The utility shall maintain at all times a current and up-to-date resource analysis capability and respond to requests for information and analysis by the commission.
4. The utility shall maintain and make publicly available at all times a current and up-to-date action plan.
5. The utility shall maintain and make publically available at all times current and up-to-date information regarding its avoided costs, renewable energy and capacity wholesale purchase tariffs and all current, pending or planned resource acquisition tariffs, programs, requests for proposals or bid offerings.

D. Commission's Responsibility

1. The commission's responsibility, in general, is to review the utility's plans and planning assumptions and determine whether they represent a reasonable set of assumptions for evaluating capital projects, resource acquisition programs, contracts or other utility commitments for meeting the energy needs of the utility's customers and is in the public interest and consistent with the goals and objectives of integrated resource planning.
2. The commission will review the utility's integrated resource plan, its program implementation schedule, and its evaluations, and generally monitor the utility's implementation of its plan. Upon review, the commission may approve, reject, approve in part and reject in part or require modifications of the utility's integrated resource plan, action plan and planning assumptions.
3. The commission will require the provision of planning information and analysis by the utility as necessary at any time to provide context and information in any regulatory matters before the commission. The commission will decide at the time it requires any information or analysis the extent to which the integrated resource plan advisory group(s), parties and/or participants will be allowed to provide responses to the commissions request for information and/or comments regarding the utility's response(s).
4. The commission staff (or one or more commissioners) may preside over part of occasional advisory group meetings to invite and obtain comments and positions of advisory group members.
5. The commission may, as it finds necessary, issue orders to provide relief (i.e., require consideration by the utility of certain circumstances, resources or scenarios) recommended by advisory group members, parties or participants.

E. Consumer Advocate's Responsibility

1. The director of commerce and consume affairs, as the consumer advocate and through the division of consumer advocacy, has the statutory responsibility to represent, protect, and advance the interest of consumers of utility services. The consumer advocate, therefore, has the duty to ensure that the utility's integrated resource plan promotes the interest of utility consumers.
2. The consumer advocate shall be a party to each utility's integrated resource planning docket and a member of any and all advisory groups established by the utility in the development of its integrated resource plan. The consumer advocate shall also participate in all public hearings and other sessions held in furtherance of the utility's efforts in integrated resource planning.

F. Public Benefit Fee Administrator's Responsibility

1. The Public Benefit Fee Administrator (PBFA) is a contractor to the Commission and has a unique role as a provider of ratepayer funded energy services.
2. The energy efficiency programs managed by the PBFA serve purposes that are closely integrated with the services provided by the energy utilities. Together, the programs managed by the PBFA and the services provided by the energy utilities need to meet energy consumer needs reliably and economically. The PBFA programs serve as important components of utility plans, can serve as alternatives to or means to defer utility capital expenditures, and are relied upon by the utilities to meet energy service requirements. It is therefore necessary that utility planning include consideration of the optimal targeting, design objectives and role of the PBFA energy efficiency programs in the context of utility plans.
3. The specific design of the energy efficiency programs managed by the PBFA, however, must reside with the PBFA to the extent that the PBFA is responsible for the efficacy of these programs and to the extent specified by contract or otherwise determined by the commission.
4. The PBFA should be a participant in the utility planning process and should have a unique role as the primary implementer of a fundamental component of Hawai'i's energy utility resource strategy. The PBFA should provide information to the utility planning process regarding the nature of existing, planned and potentially feasible programs, the expected cost and impacts of these programs as well as any other relevant issues or uncertainties. The utility planning process should evaluate the existing, planned and potentially feasible energy efficiency programs to determine which are the most cost-effective in terms of avoiding short run and long

run utility costs, the extent to which these programs can meet utility and State planning objectives and how these programs might best be targeted geographically or temporally.

5. The PBFA and the utility shall cooperate interactively to determine an optimal portfolio of programs to be implemented by the PBFA.

III. THE PLANNING CONTEXT

A. Major Steps

There are four major steps in the integrated resource planning process: planning, programming, implementation, and evaluation.

1. Planning is that process in which the utility's needs are identified; the utility's objectives are formulated; measures by which effectiveness in attaining objectives are specified; the alternatives by which the objectives may be attained are identified; the full cost, effectiveness, and benefit implications of each alternative are determined; the assumptions, risks, and uncertainties are clarified; the cost, effectiveness, and benefit tradeoffs of the alternatives are made; the resource options are examined, screened and evaluated; and resource and program choices are subjected to sensitivity analyses. The product of this process is the utility's integrated resource plan. The planning horizon for utility integrated resource plans is 20 years.
2. Programming is that process by which the utility's long-range resource program plans are scheduled for implementation over a five to ten-year period. In this process, a determination is made as to the order in which the selected program options are to be implemented; the phases or steps in which each program is to be implemented; the expected target group and the annual size of the target group or annual level of penetration of demand-side management programs; the expected annual supply-side capacity additions; the expected annual levels of effectiveness in achieving integrated resource planning objectives; and the annual expenditures, by cost categories and cost elements, required to be made by the utility to support implementation of the programs. The result of this process is an action plan. The action plan represents an implementation strategy and timetable for program implementation. The action plan shall address utility actions for a five to ten year period.
3. Implementation is that process by which the resource program options to be implemented are acquired and instituted in accordance with the utility's program implementation schedule.
4. Evaluation is that process by which the results of the resource program options are measured in light of the utility's objectives. In this process the

actual costs, effectiveness, and benefits of the resource options and the attainment of the utility's objectives are measured against those that were projected in the planning and programming stages of the planning cycle.

B. The Planning Cycle

There are four main components of the integrated resource planning cycle:

1. **Three Year Major Review.** A major review of the utility twenty-year integrated resource plan, planning assumptions and action plan(s) each three years:
 - a. The commission will initiate each three year planning cycle by establishing one or more dockets to administer the planning process for each utility with a three-year cycle for major reviews.
 - (1) The commission shall establish one or more advisory groups for each utility and/or for several energy utilities collectively.
 - (2) The commission may establish one or more technical advisory groups or technical advisory committees within advisory groups to assist in monitoring, evaluating and interpreting the assumptions, modeling and analysis utilized in the preparation of the utility integrated resource plans and action plans.
 - b. At the beginning of each three-year IRP review cycle the commission may (independently or after a public meeting) specify:
 - (1) questions and issues that the specific round of IRP analysis and the resulting plan should address, and
 - (2) any specific objectives or scenarios that should be considered in that specific round of IRP analysis.
 - c. The three year planning cycle shall establish and review:
 - (1) planning assumptions (projected demand, fuel prices, resource characteristics), including identification of possible future scenarios to be considered in developing plans and action plans.
 - (2) analytical methods (integration modeling, rate impact analyses, etc), including methods to consider identified scenarios.
 - (3) a base long range (20 year) resource plan.

- (4) a five year (or longer) action plan.
2. Ongoing Analysis and Planning Capability.
 - a. Each utility would maintain a modeling and analysis capability that is current and up to date at all times.
 - (1) On an ongoing basis, the utility shall update all important planning assumptions, forecasts, demand estimates, etc. as frequently as circumstances require and configure the planning process analytical models accordingly.
 - (2) The utility shall notify the commission and shall notify and solicit comments to be forwarded to the commission from all planning docket parties and advisory group(s) whenever planning assumptions are updated.
 - b. As needed for any regulatory purposes, the commission will request prompt and timely analysis from the utilities based on current, up-to-date planning assumptions.
 - (1) In the context of any docket, the commission may issue information requests to the utility requesting information and/or analysis based on current planning assumptions and modeling analysis capability.
 - (2) Planning docket parties and utility advisory group members shall be notified of any requests for information or analysis and documents shall be made available via the Commission's Document Management System.
 - (3) The commission may, at its discretion, issue any information requests and/or responses by the utility to the planning docket parties or participants, the advisory group(s) or any technical advisory group(s) or committee(s) for review and comment.
3. Current Action Plan.
 - a. Each utility shall maintain a current, up-to-date action plan at all times.
 - (1) To the extent that circumstances or changes in planning assumptions substantially affect the merits of the base resource plan or action plan, the Commission, parties and advisory group shall be notified.

- (2) Action plans shall be updated in accordance with supporting analytical methods and with the informed advice of the parties and advisory group.
 - b. Modified (updated) action plans would be prospective pending any explicit approval of any action plan components by the commission but would always be kept up-to-date and publicly accessible to inform all stakeholders of current planning assumptions presumed by the utility.
 - (1) Actions proposed by the utility in any docket before the commission would be reviewed by the commission in light of the current, most recently approved action plan.
 - (2) If proposed actions are not consistent with the most recently approved action plan, the proposed actions must be consistent with the current updated action plan which should be reviewed by the commission prior to or concurrently with the commission's review of the proposed action with the informed advice of the planning docket parties and advisory group(s).
 - c. Any approval of modifications to the utility integrated resource plan or action plan in a docket that considers actions not consistent with the approved utility integrated resource plan or approved action plan shall be made with the informed advice of the planning docket parties and participants in the advisory group(s). The utility shall specify and, after opportunity for comment by the planning docket parties and participants in the advisory group(s), the commission shall determine:
 - (1) The extent to which any proposed actions are not consistent with the approved integrated resource plan and approved action plan.
 - (2) The extent to which any proposed actions would affect any other aspects of the approved integrated resource plan and approved action plan.
 - (3) Whether the proposed actions and resulting associated changes in the integrated resource plan and action plan are reasonable and in the public interest.
- 4. Evaluations.
 - a. As required by the commission each utility shall provide evaluations of the implementation of integrated resource plans,

action plans and the attainment of planning objectives and statutory objectives.

C. The Docket

1. Each planning cycle for a utility will commence with the issuance of an order by the commission opening a docket for integrated resource planning.
2. The docket will be maintained throughout the planning cycle for the filing of documents, the resolution of procedural disputes and other purposes related to the utility's integrated resource plan.
3. Within 30 days after the opening of the docket or, if petitions to intervene are filed within twenty days of the opening docket, by a date specified by the commission, the utility and parties shall prepare, and file with the commission a proposed procedural order and procedural schedule for the development of the utility integrated resource plan and action plan.
 - a. The procedural schedule shall identify several stages of the planning process and specify dates, at each stage, for filings with the commission by the utility and parties and allowing filing of comments by participants in the advisory group(s). Stages shall include:
 - (1) Identification and determination of scenarios and planning assumptions.
 - (2) Identification and determination of analytical methods and models including methods to evaluate identified scenarios.
 - (3) Identification of candidate resource strategies to be evaluated.
 - (4) Proposed integrated resource plan(s) and action plan(s).
4. The utility shall complete its integrated resource plan and program implementation schedule within one year of the commencement of the planning cycle or according to a schedule approved by the commission.
5. Any party or advisory group member could petition the Commission at any time requesting the Commission's attention to review or take action regarding changes to planning assumptions or changes in action plans.
 - a. Parties or participants may request relief from the Commission by motion.

- b. Parties, participants or advisory group members may petition the commission for action regarding changes to planning assumptions, long range plans or action plans by an informally by letter. Any such requests will conform to the requirements in the commission's existing rules regarding informal complaints.

D. Submissions to the Commission

- 1. In each three year general review, the utility shall submit its integrated resource plan as follows.
 - a. The utility shall include in its integrated resource plan a full and detailed description of (1) the generation, major distribution, and transmission needs identified; (2) the forecasts made, including supply- and demand-side distributed generation forecasts; (3) the assumptions underlying the forecasts; (4) the objectives to be attained by the plan; (5) the measures by which achievement of the objectives is to be assessed; (6) the resource options or mix of options included in the plan; (7) the assumptions and the basis of the assumptions underlying the plan; (8) the risks and uncertainties associated with the plan; (9) the revenue requirements on a present value basis and on an annual basis; (10) the expected impact of the plan on demand; (11) the expected achievement of objectives; (12) the potential impact of the plan on rates and consumer bills, including any potential rate and billing impacts due to possible rate equalization measures between utility service territories, and consumer energy use; (13) the plan's external costs and benefits; and (14) the relative sensitivity of the plan to changes in assumptions and other conditions. The items enumerated should, where appropriate, be described for the plan as a whole and for each of the resources or mix of resources included in the plan.
 - b. The utility shall file with the integrated resource plan a full and detailed description of the analysis or analyses upon which the plan is based. The utility shall fully describe, among other things, (1) the data (and the source of the data) upon which needs were identified and forecasts made; (2) the methodologies used in forecasting; (3) the various objectives and measures of assessing attainment of objectives that were considered, but rejected, and the reasons or rejecting any objective or measure; (4) the resource options that were identified, but screened out and not considered and the reasons for the rejection of any resource option; (5) the assumptions and the basis of the assumptions, the risks and uncertainties, the costs, effectiveness, and benefits (including external costs and benefits) and the impacts on demand, rates, consumer bills, and consumer energy uses associated with each resource option or mix of options that was considered; (6) the

comparisons and the cost, effectiveness, and benefit tradeoffs and optimization made of the options and mixes of options; (7) the models used in the comparisons, tradeoffs, and optimization; (8) the criteria used in any ranking of options and mixes of options; and (9) the sensitivity analyses conducted for the options and mixes of options.

- c. The utility shall also file with the integrated resource plan a description of all alternate plans that the utility developed, the ranking it accorded the various plans, the criteria used in such ranking, and a full and detailed explanation of the analysis upon which it decided its preferred integrated resource plan.
 - d. The submissions should be simply and clearly written and, to the extent possible, in non-technical language. Charts graphs, and other visual devices may be utilized to aid in understanding its plan and the analyses made by the utility. The utility shall provide an executive summary of the plan and of the analyses and appropriately index its submissions.
2. In each three year general review, the utility shall submit its action plan as follows.
- a. The utility shall include in the action plan by year: the programs or phases of programs to be implemented in the year; the expected level of achievement of objectives; the expected size of the target group or level of penetration of any demand-side management program; the expected supply-side capacity addition; the expenditures, by cost categories and cost elements, required to be made by the utility to support implementation of each program or phase of a program.
 - b. The utility shall file with its action plan a full and detailed description of the analysis upon which the schedule is based. The utility shall fully describe, among other things:
 - (1) The steps required to realize and implement the supply-side and demand-side resource programs included in the schedule.
 - (2) How the target groups were selected and how program penetration for demand-side management programs and the expected levels of effectiveness in achieving integrated resource planning objectives were derived.
 - (3) The expected annual effects of program implementation on the utility and its system, the ratepayers, the environment,

public health and safety, cultural interests, the state economy, and society in general.

- c. The program implementation schedule shall also be accompanied by the utility's proposals on cost and revenue loss recovery and incentives, as appropriate.
 - d. The utility shall include the expected transmission system additions and the estimated cost required to be made by the utility to support the implementation of the transmission additions.
 - e. The utility shall include the identification of the expected major distribution system additions.
 - f. The utility shall include identification of smart grid improvements and upgrades to the utility system and the estimated cost required to be made by the utility to support the implementation of any smart grid improvements.
3. The utility shall regularly update its action plan as circumstances require so as to always maintain a current and up-to-date action plan.
- a. The utility shall make, on an ongoing basis, an assessment of the continuing validity of the forecasts and assumptions upon which its integrated resource plan and its action plan were fashioned.
 - b. The utility shall also include for each program or phase of program included in the action plan current information as follows:
 - (1) The expenditures anticipated to be made and the expenditures actually made for each program or action identified in the action plan.
 - (2) The target group size or level of penetration anticipated for each demand-side management program and the size or level actually realized.
 - (3) The effects of program implementation anticipated and the effects actually experienced.
4. The utility may at any time, as a result of a change in conditions, circumstances, or assumptions, revise or amend its integrated resource plan or its action plan. Modified (updated) action plans would be prospective pending any explicit approval of any action plan components by the commission but would always be kept up-to-date and publicly accessible to inform all stakeholders of current planning assumptions presumed by the utility.

5. The integrated resource plan and action plan shall serve as the context and analytical basis for the regulation of all utility expenditure for capital projects, purchased power, and demand-side management programs. Notwithstanding approval of an integrated resource plan: (a) an expenditure for any capital project in excess of \$2,500,000 shall be submitted to the commission for review as provided in paragraph 2.3.g.2 of General Order No.7; and (b) no obligation under any purchased power contract shall be undertaken and no expenditure for any specific demand-side management or demand response program included in an integrated resource plan or action plan shall be made without prior commission approval. All power purchases from qualifying facilities and independent power producers shall be subject to statute and commission rules.
6. The commission, upon a showing that a utility has an ownership structure in which there is no substantial difference in economic interests between its owners and customers, may waive or exempt that utility from any or all provisions of this framework, as appropriate.

E. Public Participation

To maximize public participation in each utility's integrated resource planning process, opportunities for such participation shall be provided through advisory groups to the utility, public hearings, and interventions in formal proceedings before the commission.

1. Advisory groups
 - a. The commission shall organize a group or groups of representatives of public and private entities to provide independent review and input to each utility and the commission in the integrated resource planning process. Different advisory groups or committees within an advisory group may be formed for different issues related to the planning process, as appropriate.
 - b. An independent facilitator appointed by the commission shall chair each advisory group. The costs of the independent facilitator shall be paid for by the utility, subject to recovery as part of its costs of integrated resource planning. The commission, by its staff or one or more commissioners, may participate in advisory group meetings to receive input from advisory group members.
 - c. The membership of each advisory group shall be independent of any utility and be able to provide significant perspective or useful expertise in the development of the utility's integrated resource plan. The commission shall establish the membership of each advisory group as follows:

- (1) Governmental members of each advisory group shall include, at minimum, the Consumer Advocate or the Consumer Advocate's designee, the director of the State of Hawai'i Department of Business, Economic Development & Tourism or the director's designee, and the mayor of the county in which the utility in question provides service or conducts utility business or the mayor's designee.
 - (2) Nongovernmental members shall include representatives of environmental, cultural, business, consumer, and community interests, and individuals with useful expertise in each county in which the utility provides service or conducts utility business.
 - (3) Parties admitted into the integrated resource planning docket shall be allowed to participate as advisory group members, as the commission deems appropriate.
 - (4) Each advisory group shall be representative of as broad a spectrum of interests as possible, subject to the limitation that the interests represented should not be so numerous as to make deliberations as a group unwieldy.
- d. Each advisory group shall hold meetings during key phases of a utility's integrated resource planning process, with a minimum of quarterly meetings and more frequent meetings to the extent meaningful and practical.
 - e. If a utility is considering the use of an energy resource located in another utility's service territory, then that utility shall confer with the advisory group representing the service territory of the energy resource under consideration.
 - f. Each utility shall provide all data reasonably necessary for an advisory group to participate in that utility's integrated resource planning process, subject to the need to protect the confidentiality of customer-specific and proprietary information, provided that such customer-specific and proprietary information shall not be withheld where there are mechanisms to protect confidentiality.
 - g. An advisory group participating in a utility's integrated resource planning process, or qualified person(s) representing the advisory group, shall be permitted to inspect and evaluate that utility's modeling, including but not limited to reviewing the inputs the utility has used for the modeling.
 - h. Upon request from an advisory group, the Consumer Advocate, the State of Hawai'i Department of Business, Economic Development

& Tourism, or a county represented in the advisory group, the utility shall use its modeling tools to run alternative scenarios based on alternate assumptions. At the utility's request, the commission may limit requests that are unduly repetitious or burdensome.

- i. The Public Benefits Fee Administrator shall provide all data reasonably necessary for an advisory group to participate in developing and evaluating forecasts of energy efficiency programs.
 - j. The use by the advisory groups of the collaborative process is encouraged to arrive at a consensus regarding recommendations or findings on issues. If consensus is not possible, recommendations or findings of an advisory group may be made by the vote of not less than the majority of the entire membership of that advisory group.
 - k. If a utility does not follow a recommendation or finding of an advisory group, it must provide to the advisory group and file with the commission a detailed justification why the recommendation or finding should not be adopted. The advisory group and/or its members shall have an opportunity to respond to the filing.
 - l. At any point during the integrated resource planning process, an advisory group or one or more of its members may request interim relief from the commission to resolve a significant dispute with the utility in the implementation of the planning process. Such a request will be handled as an informal complaint under the commission's rules.
 - m. All reasonable out-of-pocket costs incurred by the members of the advisory groups (other than governmental agencies) participating in a utility's integrated resource planning process shall be paid for by that utility, subject to recovery as part of that utility's cost of integrated resource planning.
2. Public input
- a. Each utility is encouraged to conduct public meetings or provide public forums at the various, discrete phases of the planning process for the purpose of securing public input.
 - b. Prior to filing a request for approval of an integrated resource plan, each utility shall provide an opportunity for public review and comment on the proposed plan during a period of not less than sixty (60) days. During each such public comment period, the utility shall hold at least one public hearing on each island that would be affected by the proposed integrated resource plan at

which the public will have the chance to ask questions, seek clarification, raise concerns, and make comments and suggestions.

- c. Each utility preparing an integrated resource plan shall assess and consider comments received during the public review and comment period and shall respond by one or more of the means listed below, stating its response in the request for approval filed with the commission:
 - (1) Modify the plan;
 - (2) Develop and evaluate alternatives not previously given serious consideration by the utility;
 - (3) Supplement, improve, or modify its analysis;
 - (4) Make factual corrections; and/or
 - (5) Explain why the comments do not warrant further response, citing the sources, authorities, or reasons that support the utility's position and, if appropriate, indicate those circumstances that would trigger utility reappraisal or further response.
- d. Upon the filing of requests for approval of an integrated resource plan, the commission may, and it shall where required by statute, conduct public hearings for the purpose of securing additional public input on the utility's proposal. The commission may also conduct such informal public meetings as it deems advisable.

3. Intervention

- a. Upon the filing of its integrated resource plan, the utility shall cause to be published in a newspaper of general circulation in the State a notice informing the general public that the utility has filed its proposed integrated resource plan with the commission for the commission's approval. The commission and the utility shall also post such public notice online on their respective websites.
- b. To encourage public awareness of the filing of a proposed utility plan, a copy of the proposed plan and the supporting analysis shall be available for public review at the commission's office and at the office of the commission's representative in the county serviced by the utility. The commission and the utility shall provide electronic copies of these documents online on their respective websites. Each utility shall note the availability of the documents for public review at these locations in its published notice. The utility shall make copies of the executive summary of the plan and the analysis

available to the general public at no cost, except the cost of duplication.

- c. Applications to intervene or to participate without intervention in any proceeding in which a utility seeks commission approval of its integrated resource plan are subject to the rules prescribed in part IV of the commission's General Order No.1 (Practice and Procedure before the Public Utilities Commission); except that such applications may be filed with the commission not later than 20 days after the publication by the utility of a notice informing the general public of the filing of the utility's application for commission approval of its integrated resource plan, notwithstanding the opening of the docket before such publication.
 - d. A person's status as an intervenor or participant shall continue through the life of the docket, unless the person voluntarily withdraws or is dismissed as an intervenor or participant by the commission for cause.
4. Intervenor funding
- a. Upon the issuance of the commission's final order on a utility's integrated resource plan or any amendment to the plan, the commission may grant an intervenor or participant (other than a governmental agency, a for-profit entity, and an association of for-profit entities) recovery of all or part of the intervenor's or participant's direct out-of-pocket costs reasonably and necessarily incurred in intervention or participation. Any recovery and the amount of such recovery are in the sole discretion of the commission.
 - b. To be eligible for such recovery:
 - (1) The intervenor or participant must show a need for financial assistance;
 - (2) The intervenor or participant must maintain accurate and meaningful books of account on the expenditures incurred; and
 - (3) The commission must find that the intervenor or participant made a substantial contribution in assisting the commission in arriving at its decision.
 - c. The intervenor's or participant's books of account are subject to audit, and the commission may impose other requirements in any specific case.

- d. Such recovery may be provided upon the application of the intervenor or participant within 30 days after the issuance of the commission's final order (or the entry of a settlement between the parties), together with justification and documented proof of the costs incurred.
- e. The commission may provide for recovery via periodic installments during the course of a proceeding. To be eligible for this option, the intervenor or participant shall file a notice of intent to seek recovery and an estimated budget within 30 days after being granted intervention or participation. The intervenor or participant may thereafter make periodic applications for recovery during the proceeding, within the final deadline specified above. The intervenor or participant may request to revise the estimated budget as appropriate.
- f. The costs of intervenor funding shall be paid for by the utility, subject to recovery as part of its costs of integrated resource planning.

IV. PLANNING CONSIDERATIONS

A. Scenarios

Each utility, in consultation with advisory group(s), shall develop scenarios to guide integrated resource planning, including but not limited to possible assumptions, regarding future demand, the availability, characteristics and costs of resource options, and other principal factors that would affect the determination of prudent integrated resource plans. Scenarios may be based on circumstances outside the control of the utilities and commission (e.g., major increases in oil prices) or within their control (e.g., a major resource strategy). A sufficient number and range of scenarios should be developed to (1) incorporate a broad range of perspectives and input from non-utility stakeholders and the public; (2) provide meaningful breadth to the scope of analysis and assumptions; (3) frame meaningful planning objectives and measures of attainment; and (4) test the robustness of candidate strategies with respect to a range of possible future circumstances and risks.

B. Forecasts

Forecasts shall be conducted with respect to each scenario to inform the development of each utility's integrated resource plan.

1. Demand

- a. The utility, in consultation with advisory group(s), shall develop a range of forecasts of the amount of energy demand over the planning horizon.

- b. Each forecast shall identify the significant demand and use determinants; describe the data, the sources of the data, the assumptions (including assumptions about fuel prices, energy prices, economic conditions, demographics, population growth, technological improvements, and end-use), and the analysis upon which the forecast is based; indicate the relative sensitivity of the forecast result to changes in assumptions and varying conditions; and describe the procedures, methodologies, and models used in the forecast, together with the rationale underlying the use of such procedures, methodologies, and models.
 - c. Among the data to be considered are historical data on energy sales, peak demand, system load factor, system peaks, and such other data of sufficient duration to provide a reasonable basis for the utility's estimates of future demand.
 - d. As feasible and appropriate, the forecast shall be by the system as a whole and by customer classes.
2. Demand-Side Management
- a. Energy Efficiency: The PBFA shall work with each utility and advisory group(s) to develop a range of forecasts of the potential development of energy efficiency programs over the planning horizon.
 - b. Load management: Each utility shall work with the PBFA and advisory group(s) to develop a range of forecasts of the potential development of demand response and load management programs, including rate and fee design measures, over the planning horizon.
3. Distributed Generation
- Each utility shall work with advisory group(s) to develop a range of forecasts of the amount of distributed generation development and penetration via NEM, FIT, and other means.

C. Objectives

- 1. The ultimate objective of each utility's integrated resource plan is to achieve and exceed Clean Energy Objectives in meeting the energy needs of the utility's customers over the ensuing 20 years.
- 2. Each utility, in consultation with advisory group(s), shall identify a meaningful set of planning objectives for its integrated resource plan and shall identify more specific, shorter-term objectives for its action plans to facilitate achievement the objectives of the integrated resource plan and provide benchmarks to measure progress.

3. The commission may specify objectives for the integrated resource plan or action plans.
4. An advisory group may recommend objectives for the integrated resource plan or action plans to the utility or the commission.

D. Effectiveness Measures

1. The integrated resource plan and action plans shall specify the measures by which attainment of the objective or objectives is to be determined.
2. Where direct, quantifiable measures are not available, proxy measures may be used.

E. Resource Options

1. In the development of its integrated resource plan, the utility shall consider all feasible supply-side and demand-side resource options appropriate to Hawai'i and available within the years encompassed by the integrated resource planning horizon to meet the stated objectives.
2. The utility shall include among the options the supply-side and demand-side resources or mixes of options currently in use, promoted, planned, or programmed for implementation, as well as potential or planned retirements of existing resources in favor of clean energy resources. Supply-side and demand-side resource options include those resources that are or may be supplied by persons other than the utility.
3. The utility shall initially identify all possible supply-side and demand-side resource options. The utility may, upon review and consultation with advisory group(s), screen out those options that are clearly infeasible. The utility, in consultation with advisory group(s), may establish criteria for screening out clearly infeasible options.

F. Data Collection

1. For each feasible resource option, the utility shall determine its life cycle costs and benefits and its potential level of achievement of objectives. The utility shall identify the option's total costs and benefits--the costs to the utility and its ratepayers and the indirect, including external (spillover) costs and benefits. External costs and benefits include the cost and benefit impact on the environment, people's lifestyle and culture, and the State's economy.
2. To the extent helpful in analysis, the utility shall distinguish between fixed costs and variable costs and between sunk costs and incremental costs; and the utility shall identify any opportunity costs.

3. The costs and benefits shall, to the extent possible and feasible, be (a) quantified and (b) expressed in dollar terms. When it is neither possible nor feasible to quantify any cost or benefit, such cost or benefit shall be qualitatively measured. The methodology used in quantifying or in qualitatively stating costs and benefits shall be detailed.

G. Assumptions; Risks; Uncertainties

1. The utility shall identify the assumptions underlying any resource option or the cost or benefit of any option or any analysis performed.
2. The utility shall also identify the risks and uncertainties associated with each resource option.
3. The utility shall further identify any technological limitations, infrastructural constraints, legal and governmental policy requirements, and other constraints that impact on any option or the utility's analysis.

H. Models

1. The utility may utilize one or more generally accepted planning models or methodologies in comparing resource options and otherwise in analyzing the relative values of the various options or combinations of options.
2. Each model or methodology used must be fully described, documented, and explained in terms that a layperson can understand.

I. Analyses

1. The utility shall conduct analyses to compare and weigh the various options and various alternative mixes of options. Alternative mixes of options include variously integrated supply-side and demand-side management programs.
2. The utility shall conduct such analyses from varying perspectives, including, as appropriate, the utility cost-benefit perspective, the ratepayer impact perspective, the participant impact perspective, the total resource cost perspective, and the societal cost-benefit perspective.
3. The utility shall analyze all options on a consistent and comparable basis. It shall give the costs, effectiveness, and benefits of demand-side management options consideration equal to that given to the costs, effectiveness, and benefits of supply-side options. The utility may use any reasonable and appropriate means to assure that such equal consideration is given.
4. The utility shall compare the options on the present value basis. For this purpose, the utility shall discount the estimated annual costs (and benefits,

as appropriate) at an appropriate rate. The utility shall fully explain the rationale for its choice of the discount rate.

5. The utility shall prioritize the various options and mixes of options based on the goal and principles set forth in Part II.A & B, supra, and upon such reasonable additional criteria as it may establish in consultation with advisory group(s).

J. Resource Optimization

1. The utility, in consultation with advisory group(s), shall develop a number of alternative strategies to meet the planning objectives. Strategies may be based on any of various themes, including addressing specific scenarios or featuring specific resource options. A sufficient spectrum of strategies should be developed and analyzed to consider the scope of the identified plausible resource options and planning scenarios.
2. Based on its analyses, the utility, in consultation with advisory group(s), shall select those resource options or strategies that best achieve the planning objectives considered across the range of scenarios.
 - a. The options or strategies shall be selected in a fashion as to achieve an integration of supply-side and demand-side options.
 - b. The selection of options or strategies constitutes the utility's integrated resource plan.
3. For each strategy, the utility shall identify the revenue requirements on a present value and annual basis. It shall note the risks and uncertainties and describe the strategy's impact on rates, customer energy use, customer bills, and the utility system. It shall also describe the strategy's impact on external elements--the environment, people's lifestyle and culture, the State's economy, and society in general.
4. The utility shall rank the various strategies, based on such criteria as it may establish in consultation with advisory group(s). The utility shall designate one or some combination of these strategies as its preferred plan and submit to the commission the preferred plan as its proposed integrated resource plan, along with the alternative plans. It is recognized that the proposed integrated resource plan may not be the least expensive strategy and may include resource options and/or contingency measures to reasonably attain the planning objectives in light of uncertainty regarding the planning scenarios.

K. Sensitivity Analysis

The utility shall subject its selection of resource options to sensitivity analysis by altering assumptions and other parameters.

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE
STATE OF HAWAII

In the Matter of

DOCKET NO. 2008-0108

PUBLIC UTILITIES COMMISSION

Instituting a Proceeding to Investigate
Implementing a Decoupling Mechanism for
Hawaiian Electric Company, Inc., Hawaii
Electric Light Company, Inc., and Maui
Electric Company, Limited

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this date a copy of the foregoing document was
duly served upon the following individuals by placing a copy of same in the United States Mail,
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